IN THE CLAIMS:

Amendments to the Claims

Please amend the claims as shown below.

Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1.   (original) An image diagnostic apparatus comprising: imaging means for producing a tomographic image of an object to be examined; a storing unit of storing a moving image formed by a plurality of frames of the tomographic image; and a display unit for displaying the moving image, further comprising an operation unit for designating a desired portion of the tomographic image with a mark; and tracking means for making the mark follow the desired portion of the tomographic image from image information of the desired portion.

2.   (original) An image diagnostic apparatus according to claim 1, wherein the operation unit includes means for inputting a command to display a one frame image of the moving image stored in the storing unit on the display unit and a command to superpose the mark on the designated portion of a tissue the movement of which is tracked in the one frame image displayed.

3.   (original) An image diagnostic apparatus according to claim 2, wherein the tracking means includes cutout image setting means for setting a cutout image of a size including the designated portion corresponding to the mark on the one frame image displayed on the display unit, cutout image tracking means for reading out another frame images of the moving image from the storing unit and extracting a local image of the identical size which is most coincided with the cutout image, moving distance calculating means for calculating a coordinate difference between

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the most coincided local image and the cutout image, and movement tracking means for calculating the coordinate of the designated portion after movement on the basis of the coordinate difference.

4.   (original) An image diagnostic apparatus according to claim 3, wherein the cutout image tracking means extracts the most coincided local image by performing a correlation processing on image data of the cutout image and the local images.

5.   (original) An image diagnostic apparatus according to claim 1, wherein the moving image stored in the storing unit is obtained based on an ultrasound imaging method while RF signals corresponding to the moving image are stored in the storing unit, and the movement tracking means calculates a coordinate of the designated portion after movement on the basis of the coordinate difference, extracts a plurality of the RF signals corresponding to coordinates around the coordinate of the designated portion after movement, calculates a cross correlation between the plurality of the extracted RF signals, and corrects the coordinate after movement based on a position of a maximum value of the cross correlation.

6.   (original) An image diagnostic apparatus according to claim 3, wherein the cutout image tracking means repeatedly performs the processings on another frame image of the moving image by using the extracted local image as the cutout image and sequentially extracts local images of the identical size which are most coincided with the cutout image, and the moving distance calculating means and the movement tracking means calculate a coordinate difference between the sequentially extracted most coincided local images and the cutout image and

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calculate a coordinate of the designated portion after movement based on the calculated coordinate difference.

7.   (original) An image diagnostic apparatus according to claim 3, wherein the cutout image tracking means searches local images to extract a local image of the identical size which is most coincided with the cutout image within a searchable range set to be an area having a set pixel value larger than that of the cutout image.

8.   (currently amended) An image diagnostic apparatus according to ~~any of claims~~ claim 1 ~~to 3~~, wherein the tracking means stores the coordinate of the designated portion after movement and displays a movement trajectory of the mark superposed on the moving image.

9.   (currently amended) An image diagnostic apparatus according to ~~any of claims~~ claim 1 ~~to 3~~, wherein the tracking means stores the coordinate of the designated portion after movement, calculates at least any one of a moving distance, a moving speed, and a moving direction of the designated portion, and displays a shift thereof as a line view on the display unit.

10.   (currently amended) An image diagnostic apparatus according to ~~any of claims~~ claim 1 ~~to 3~~, wherein the tracking means stores coordinates of at least two designated portions input from the operation unit after movement, calculates at least any one of a distance between the two designated points, a shift of the distance, a shift speed of the distance, and a change rate of the distance, and displays it as a line view on the display unit.

11.   (currently amended) An image diagnostic apparatus according to ~~any of claims~~ claim 1 ~~to 3~~, wherein the tracking means calculates at least any one of a thickness of cardiac muscle, a thickness shift, a thickness shift speed, and a change rate of the thickness on the basis of at least two designated portions set inside and outside the cardiac muscle from the operation unit, and displays it as a line view on the display unit.

12.   (currently amended) An image diagnostic apparatus according to ~~any of claims~~ claim 1 ~~to 3~~, wherein the tracking means calculates a position after movement of a plurality of designated portions along an inner wall of a cardiac ventricle input from the operation unit, calculates a capacity of the cardiac ventricle and a capacity shift based on a line connecting the plurality of the designated portions or an approximated curve of this line, and displays it on the display unit.

13.   (original) An image diagnostic apparatus according to claim 1, further comprising an operation unit for designating a region of interest (ROI) on the tomographic image and following means for extracting an image portion of the tomographic image corresponding to at least one part of the ROI and making a display position of the ROI follow the movement of the image portion.

14.   (original) An image diagnostic apparatus according to claim 13, wherein the following means further includes tracking means for tracking the movement of the image portion by setting one or a plurality of reference points in the ROI and extracting one or a plurality of image portions corresponding to the reference points, and control means for making the ROI displayed on the display unit follow the movement of the reference point corresponding to the image portion.

15.   (original) An image diagnostic apparatus according to claim 13, further comprising a measured information calculating unit for measuring information concerning the tissue from a pixel value inside at least either of the ROI before movement or the ROI after movement, and displaying a shift of the measured information as a line view on the display unit.

16.   (original) An image diagnostic apparatus according to claim 15, wherein the measured information includes at least any one of a brightness, a brightness average, and a brightness shift.

17.   (currently amended) An image diagnostic apparatus according to claim 15 or 16, wherein the measured information calculating unit stores coordinates of at least two ROIs input from the operation unit after movement, calculates at least any one of a brightness, a brightness average, and a brightness shift in the two ROIs, and displays it as a line view on the display unit.

18.   (original) A tissue movement tracking method comprising: a first step of displaying a one frame image of a moving image formed by producing tomographic images of an object to be examined; a second step of setting a designated portion by inputting a command to superpose a mark on the designated portion of a tissue the movement of which is tracked in the displayed one frame image; a third step of setting a cutout image of a size including the designated portion in the one frame image; a fourth step of searching another frame images of the moving image and extracting a local image of the identical size which is most coincided with the cutout image; and a fifth step of calculating a coordinate of the designated portion after movement based on a coordinate difference between the most coincided local image and the cutout image.

19.   (original) A tissue movement tracking method according to claim 18, wherein in the fourth step, the most coincided local image is extracted by performing a correlation processing on image data of the cutout image and of the local image.

20.   (original) A tissue movement tracking method according to claim 18, wherein the moving image is produced by an ultrasound imaging method while RF signals corresponding to the moving image are stored, and in the fourth step, a coordinate of the designated portion after movement is calculated based on the coordinated difference between the most coincided local image and the cutout image, a plurality of the RF signals corresponding to coordinates around the coordinate of the designated portion after movement are extracted, a cross correlation among the plurality of extracted RF signals are calculated, and the coordinate after movement is corrected in accordance with a maximum value of the cross correlation.

21.   (currently amended) A tissue movement tracking method according to any of claims claim 18 to 20, wherein the extracted local image is set as the cutout image, the fourth and fifth steps are repeatedly executed on another frame images of the moving image, and a coordinate of the designated portion after movement is sequentially calculated.

22.   (currently amended) A tissue movement tracking method according to any of claims claim 18 to 20, wherein the cutout image has a size including a tissue other than the tissue of the designated portion.

23.   (currently amended) A tissue movement tracking method according to any of claims claim 18 to 20, wherein in the fourth step, the searchable range where a local image of the identical size which is most coincided with the cutout image is extracted is set to be an area having the set pixel number larger than that of the cutout image.

24.   (currently amended) A tissue movement tracking method according to any of claims claim 18 to 20, wherein the mark is displayed at the position of the designated portion after movement on the moving image in the display.

25.   (original) A tissue movement tracking method according to claim 24, wherein the coordinate of the designated portion after movement is stored and a movement trajectory of the mark is superposed on the moving image in the display.

26.   (currently amended) A tissue movement tracking method according to any of claims claim 18 to 20, wherein the coordinate of the designated portion after movement is stored, further including a sixth step of calculating at least any one of a moving distance, a moving speed, and a moving direction of the designated portion.

27.   (original) A tissue movement tracking method according to claim 26, wherein a shift of at least any one of the moving distance, the moving speed, and the moving direction of the designated portion is displayed as a line view.

28. (currently amended) A tissue movement tracking method according to any of claims claim 18 to 20, wherein a plurality of designated portions are set on a cardiac wall of cardiac muscle, a moving direction of each designated portion is calculated, and its shift along time is displayed in the image while a reference point

in a moving direction is set as a gravity center and a direction toward the gravity center and a direction against the gravity center are respectively presented in different colors.

29.   (original) A tissue movement tracking method according to claim 27, wherein the brightness is modulated in response to the moving speed.

30.   (currently amended) A tissue movement tracking method according to ~~any of claims~~ claim 18 ~~to 20~~, wherein at least two designated portions are set and coordinates of the two designated portions after movement are stored, further including a sixth step of calculating at least any one of a distance between the two designated portions, a change of the distance, a change speed of the distance, and a change rate of the distance.

31.   (currently amended) A tissue movement tracking method according to ~~any of claims~~ claim 18 ~~to 20~~, further including a sixth step of setting at least two designated portions inside and outside cardiac muscle and calculating at least any one of a thickness of the cardiac muscle, a thickness change, a change speed of thickness, and a change rate of thickness.

32.   (currently amended) A tissue movement tracking method according to ~~any of claims~~ claim 18 ~~to 20~~, wherein a plurality of the designated portions are set along an inner wall of a cardiac ventricle, and a capacity and a capacity shift of the cardiac ventricle is calculated on the basis of a line connecting the plurality of the designated portions or an approximated curve of the line.

33.   (original) A tissue movement tracking method according to claim 18, wherein in the second step a command to superpose a mark identifying the ROI on the tissue in the displayed one frame image is input, in the third step a reference point is determined corresponding to the ROI and a cutout image of a size including the reference point is set in the one frame image, and in the fifth step a coordinate of the mark identifying the ROI after movement is calculated on the basis of the stored coordinate of the reference point after movement, and the mark is superposed on another frame image of the moving image in the display.

34.   (original) An image diagnostic apparatus according to claim 1, wherein the tracking means includes correlation means for calculating a correlation of the image information between the one frame image and an adjoining frame image of the moving image and acquires positional information of the mark corresponding to the desired portion in the adjoining frame image from the correlation value.